Attachment B

Fiscal Impact Statement

Associated with the

Notice of Intended Action

Stream Use Designation Revisions
Rule 567 IAC 61.3(5)

Prepared by the

Department of Natural Resources

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Fiscal Impact Statement

Introduction: This Fiscal Impact Statement (FIS) provides the projected costs and potential benefits associated with the proposed adoption of the stream use designation revisions by reference at rule 567 IAC 61.3(5). The Department has been performing aquatic life and recreational use assessments on Iowa's rivers and streams since September of 2005 in order to determine the highest attainable use for an identified stream segment.

The need to perform use assessment and use attainability analyses (UA/UAA) arises from changes to Iowa's water quality standards which became effective on March 22, 2006. One of these changes was the amendment of rule 61.3(1) which designated all of Iowa's perennial rivers and streams and intermittent streams with perennial pools as Class A1 Primary Contact Recreational Use and Class B(WW-1) – Type 1 aquatic life use. The rule further provides that designated uses of segments may change based on a use assessment and use attainability analysis.

Pursuant to section 455B.176A, the redesignation of streams through the amendment of rule 61.3(1)"b" cannot be implemented through new or revised NPDES permit limits until a UA/UAA has been performed for an affected stream.

The department has previously provided a FIS for the March 22, 2006 rules addressing the likely costs of the expected ammonia-nitrogen removal and disinfection requirements. The assumptions and evaluations made in the August 16, 2005 FIS remain relatively unchanged as the recommendations from the UA/UAAs support the assumptions made at that time. Therefore, this FIS for the proposed stream designation revisions will defer to the August 16, 2005 FIS which is available at the department's web site at http://www.iowadnr.com/water/standards/rulemaking.html

It is important to note that department staff did not evaluate the specific individual impacts or treatment needs for each wastewater treatment facility noted in the August 16, 2005 FIS. Basic assumptions and evaluations were made on the general impacts on all facilities predicted to be affected. The specific individual impacts and needs will be best evaluated by the facility's staff or retained consultant. Innovative or unique treatment methods may be available to some facilities thereby reducing specific costs.

Rebuttable Presumption

Rule 567-61.3(1)"b", effective March 22, 2006, designated all perennial rivers and streams or intermittent streams with perennial pools in Iowa as Class A1 and all of the same streams not specifically listed in the Surface Water Classification as Class B(WW-1) waters, to protect these waters for recreational and aquatic life uses. The adoption of this provision added approximately 10,000 to 14,000 miles of newly designated streams, including stream segments downstream of all continuously discharging wastewater treatment facilities. The numerical criteria associated with both of these designations applied at all specified stream flow regimes, including the critical stream low flows ($1Q_{10}$, $7Q_{10}$, and $30Q_{10}$). Since most of these stream segments will have critical low flows of zero cfs, this implies that the allowed amount or concentration of key materials that could be assimilated in the designated stream reach would be very near or equal to the numerical criteria. Thus, for wastewater treatment facilities, this would reduce the amount of treated pollutants, such as ammonia nitrogen, that would be allowed in their discharge and result in the need to provide additional treatment of key parameters, particularly ammonia nitrogen and bacteria.

Pursuant to section 455B.176A, the redesignation of streams through the amendment of rule 61.3(1)"b" cannot be implemented through new or revised permit limits until a use attainability analysis has been performed for an effected stream.

It should be noted that the fiscal impact estimates are not solely based on designating all perennial rivers and streams or intermittent streams with perennial pools in Iowa as Class A1 and all of the same streams not specifically listed in the Surface Water Classification as Class B(WW-1) waters. The estimates also consider the results of the Use Assessments/Use Attainability Analyses (UA/UAA) that were conducted on these waters to determine the most appropriate use designation. However, the Department anticipated that some form of Class B aquatic life use designation and Class A recreational use would remain for most of these streams after these UA/UAAs were complete which is holding true. The impact of this proposed rule is realized through establishing the appropriate aquatic life and recreational use designations for Iowa's perennial rivers and streams or intermittent streams with perennial pools based on guidance from EPA, not necessarily the establishment of a rebuttable presumption of uses for Iowa's waters.

A. Impacted Facilities: Statewide, originally 334 wastewater treatment facilities (210 municipal, 114 semi-public, 10 industrial) were anticipated to be impacted through the implementation of more stringent effluent ammonia-nitrogen and bacteria limits. The number of impacted facilities has increased to some extent due to new facilities, facilities missed in the original screening of impacted facilities, and a refined interpretation of what facilities may be impacted. While the number of impacted facilities has grown it is not expected to dramatically change the previously calculated fiscal impact from August 16, 2005.

The treated effluent from these continuously discharging facilities currently enter General Use (non-designated) watercourses ranging from channelized ditches to meandering waterways. All of these watercourses were found not to meet the current definitions for designated uses. Under the 3/22/2006 rule change, these watercourses became designated as Class A1 and Class B(WW-1) waters.

It should be noted that some facilities do not possess significant ammonia-nitrogen concentrations in their wastewater and may not be affected by this new rule. However, there could be other parameters that may be water quality-limited. These non-traditional water quality-limited parameters could include toxics, toxic metals, or dissolved solids for which facility specific treatment techniques may be required. No economic projections are made of the non-traditional water quality-limited parameters.

B. Projected Costs: With the proposed designation of stream segments under the rebuttable presumption provision, it is anticipated that these designated streams will possess critical stream low flows ($1Q_{10}$, $7Q_{10}$, and $30Q_{10}$) of 0.0 cfs. Therefore, little assimilative capacity will be available in the stream for mixing that would provide for more relaxed ammonia-nitrogen effluent limitations.

Nitrification Costs: Achieving compliance for the original 334 facilities would require a nitrification treatment process similar to an extended aeration activated sludge wastewater treatment facility because conventional secondary wastewater treatment units will not be able to meet end-of-pipe ammonia-nitrogen water quality-based effluent limits. The nitrification units may include oxidation ditch-type and other various designs of extended aeration activated sludge wastewater treatment processes that are costly to build and operate. It is assumed that aerated lagoon and trickling filter facilities will upgrade to these types of nitrification facilities to comply with anticipated ammonia limits. In addition, it is assumed that any activated sludge facility may need to upgrade or possibly change its current operation to provide for extended aeration to remove ammonia-nitrogen, resulting in higher operation and maintenance costs and possibly reduced design capacity.

The fiscal impact assessment has attempted to establish a range of costs that considers both higher cost and lower cost scenarios. The established range incorporates conservative approaches to estimating the potential fiscal impact. It is understood that a multitude of factors or variables may result in estimates that are either below the lower cost estimates or exceed the higher cost estimates and were not considered due to the difficulty of predicting which variables could apply to any facility.

Disinfection Costs: For each of the 334 facilities, the proposed rule change would require each facility to meet effluent bacteria levels equal to the Water Quality Standard's numerical bacteria criteria. As specified in existing rule, all bacteria criteria are end-of pipe limits with no provision for mixing with critical low stream flows. It is assumed that the existing wastewater treatment or even after operation of nitrification unit processes would not comply with the stringent bacteria criteria without additional treatment. Thus, each facility would need to install effluent disinfection equipment. Since the most widely used treatment technique for disinfection is chlorination, the economic estimates are based on the construction and O&M costs for chlorination equipment. While chlorine is a very effective disinfection agent, it is also a very toxic residual to the receiving stream's aquatic life. Therefore, dechlorination equipment costs were included in the cost estimates. The overall disinfection costs have been generalized to uniformly cost $150,000 per facility.

Other alternative disinfection treatment options are available to wastewater treatment facilities. However, their costs are traditionally greater than chlorination and dechlorination. Each facility's managing authority will need to select the type of unit process, with cost being one of the factors. There are no higher cost or lower cost options for disinfection equipment. However, as noted in the attached addendum, disinfection costs may not be applicable for some types of implementation alternatives (such as land application) that do not discharge to a receiving stream. The appropriateness and applicability of these alterative options are best left to the facility's managing authority and are not integrated into any of the economic estimates.

C. Anticipated Benefits:

The anticipated benefits from the adoption of the stream designation revisions are also associated with the potential improvements to: instream conditions for aquatic and semiaquatic life, wildlife, and livestock watering needs, and aesthetic conditions. These potential benefits do not have readily identifiable monetary value and are not estimated in this impact statement.

Summary

The projected fiscal impact to municipal, industrial and semipublic wastewater treatment facilities from the 2006 rule-making in regard to the application of recreational use and aquatic life protections was projected to be approximately between $790 million to $956 million. **This fiscal impact estimate is relatively unaffected by the current proposed adoption of the stream use designation revisions as the assumptions and generalization used in the August 16, 2005 FIS are holding true.**

The following table summarizes the total impact of the March 22, 2006 rule. It's important to note that none of these costs will be realized until the stream designation revisions are effective and each affected facility receives a renewed NPDES permit detailing the new discharge requirements.

Table 1
Fiscal Impact Summary

Rule-making Topic	Number of Affected Facilities	Projected Fiscal Impact		
		Nitrification	Disinfection/ Dechlorination	Total
Higher Cost Scenario				
1) General Use Definition Changes*	*	*	*	*
2) Class B(WW-1, 2, & 3) Modification	N/A	N/A	N/A	N/A
3) Protected Flow	63**	**$177,946,000**	N/A	**$177,946,000**
4) Rebuttable Presumption*	334	**$716,583,000**	**$50,100,000**	**$766,683,000**
5) Add Class A-1 to all Class B(LR)	14 + 63**	N/A	**$11,550,000**	**$11,550,000**
Totals	**411**	**$894,529,000**	**$61,650,000**	**$955,879,000**
Lower Cost Scenario				
1) General Use Definition Changes*	*	*	*	*
2) Class B(WW-1, 2, & 3) Modification	N/A	N/A	N/A	N/A
3) Protected Flow	36***	**$134,011,000**	**N/A**	**$134,011,000**
4) Rebuttable Presumption*	246	**$594,605,000**	**$50,100,000**	**$644,705,000**
5) Add Class A-1 to all Class B(LR)	14 + 63***	**N/A**	**$11,550,000**	**$11,550,000**
Totals	**323**	**$728,616,000**	**$61,650,000**	**$790,266,000**
	Range	**$790,266,000 to $955,879,000**		

* Impacts of Topic 1 are included in Topic 4.

** Same facilities, but having separate costs due to different topics.

***36 facilities are part of the 63. Less facilities are affected by nitrification in the lower cost scenario. However, all 63 are still impacted by disinfection in the lower cost scenario.

Anticipated Implementation Approach: The Department clearly recognizes that the implementation of these proposed rules and rule changes will have far-reaching economic impacts. Historically, compliance with the provisions of the federal Clean Water Act has carried a significant price tag and will continue to be costly as requirements and guidelines are reaffirmed. It is the goal of the Department to implement these proposed rules in a reasonable, practicable, and responsible manner. Thus, the implementation will be linked to the reissuance of each facility's NPDES permit. All available NPDES provisions and considerations will be made to allow adequate time for each

facility to comply with the adopted rules according to their time constraints, economic abilities, and source of financial aid. The State Revolving Fund (state administered low-interest loan program) will be available to assist in the eligible construction of the required facilities. If needed, additional fund monies will be sought to assure adequate loan funding.